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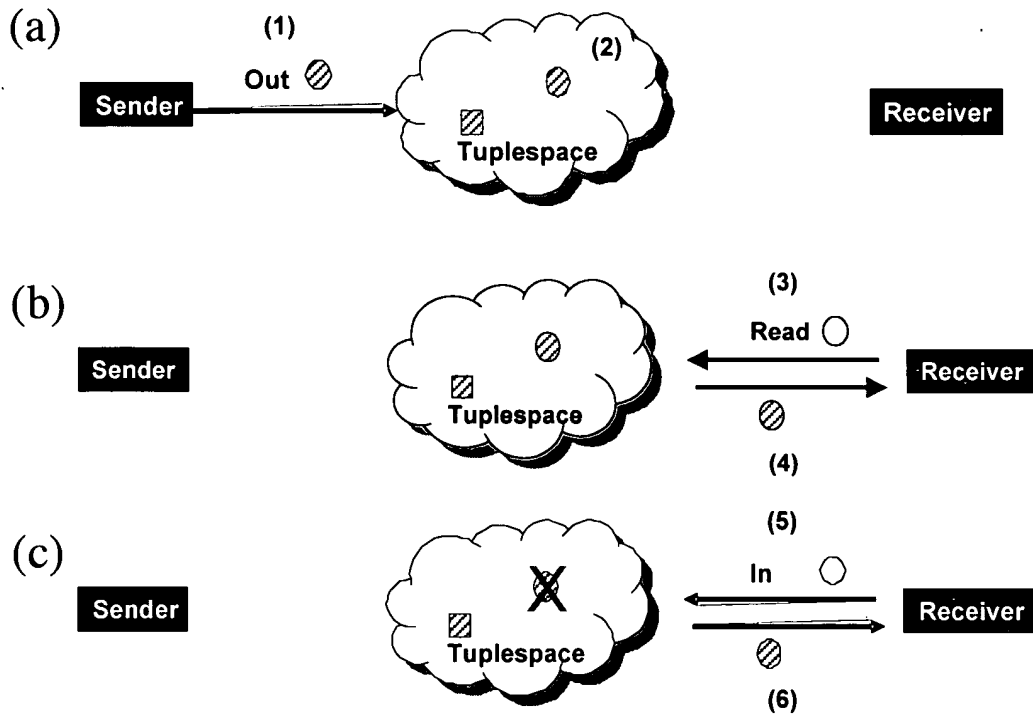


FIG. 1 (PRIOR ART)

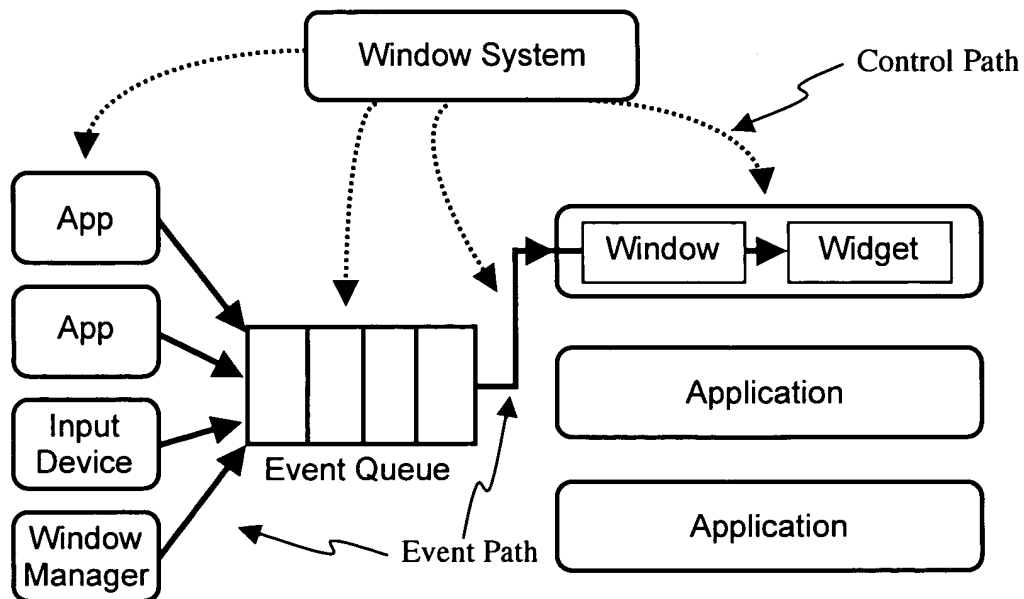


FIG. 2 (PRIOR ART)

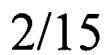


FIG. 4

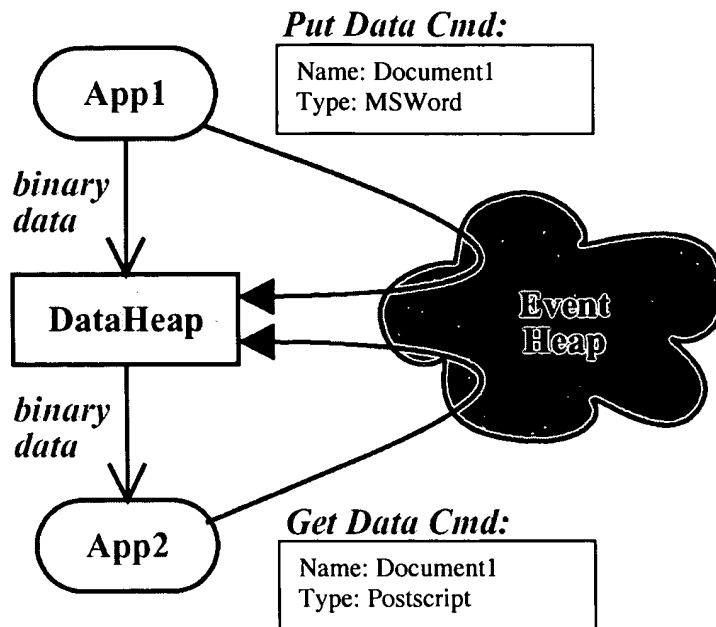


FIG. 5

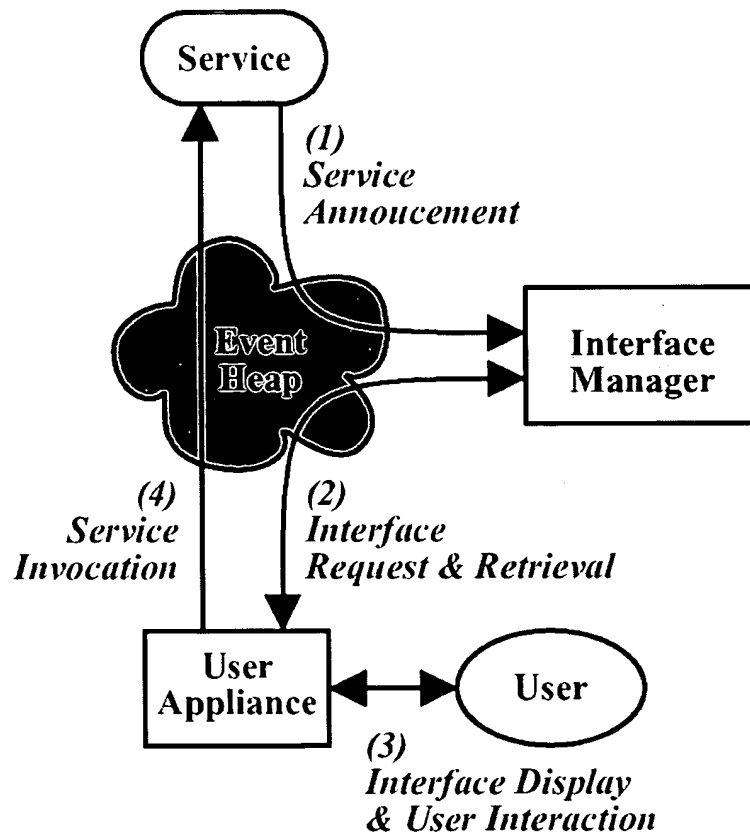


FIG. 6A



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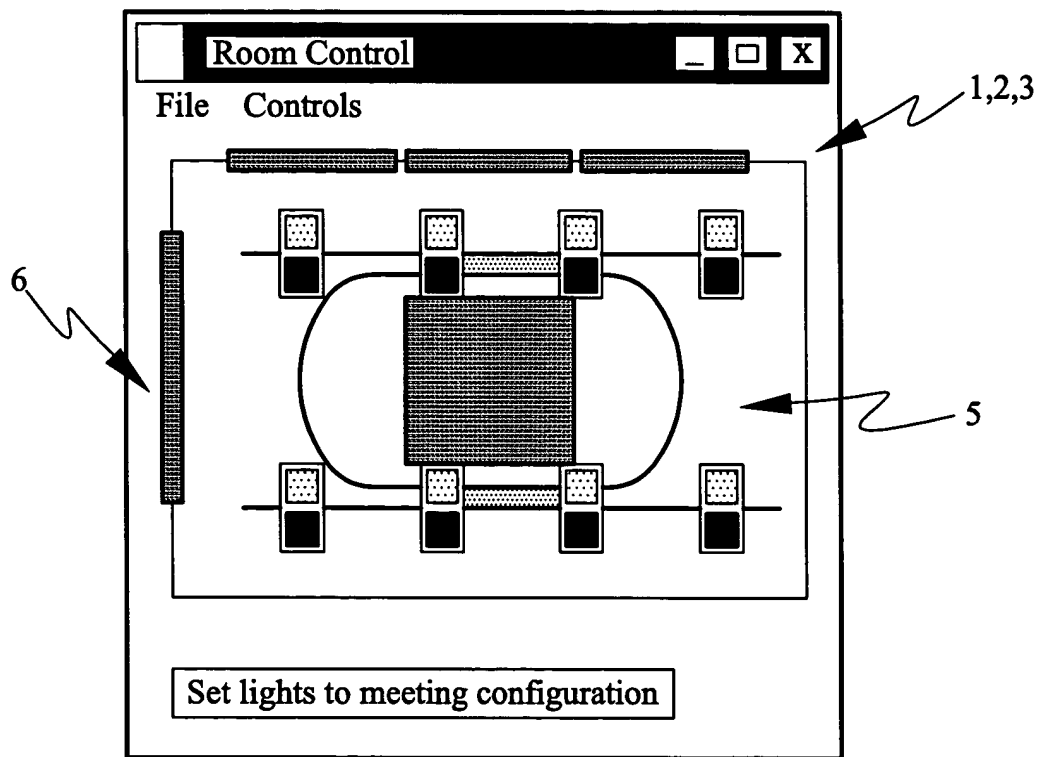
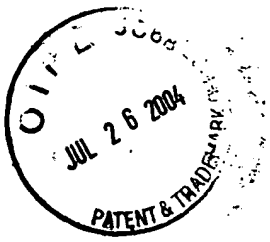


FIG. 6B



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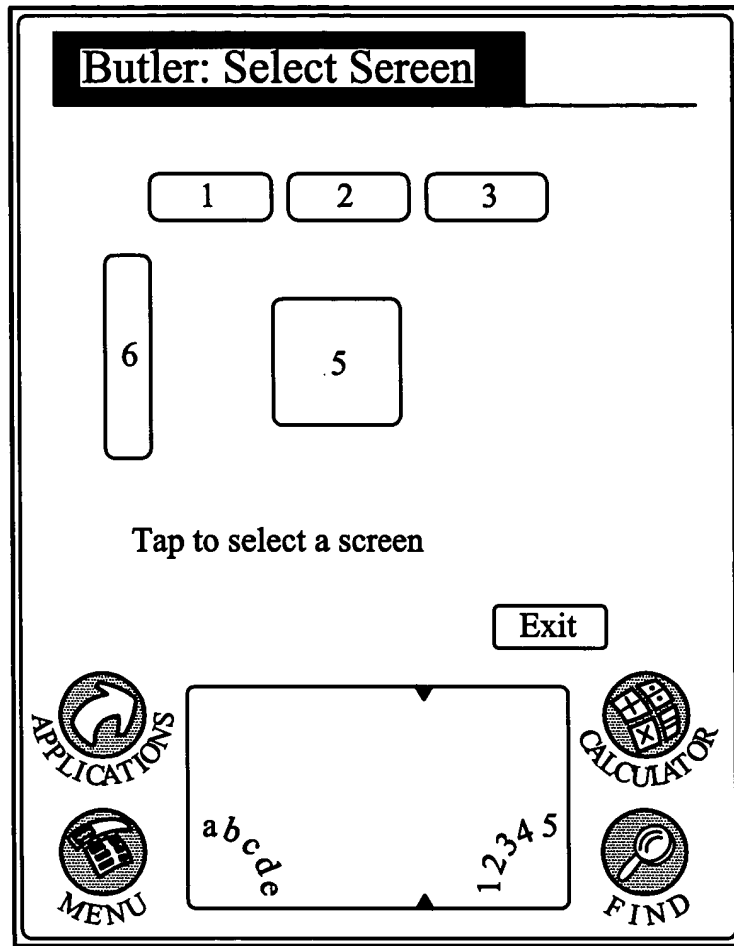


FIG. 6C

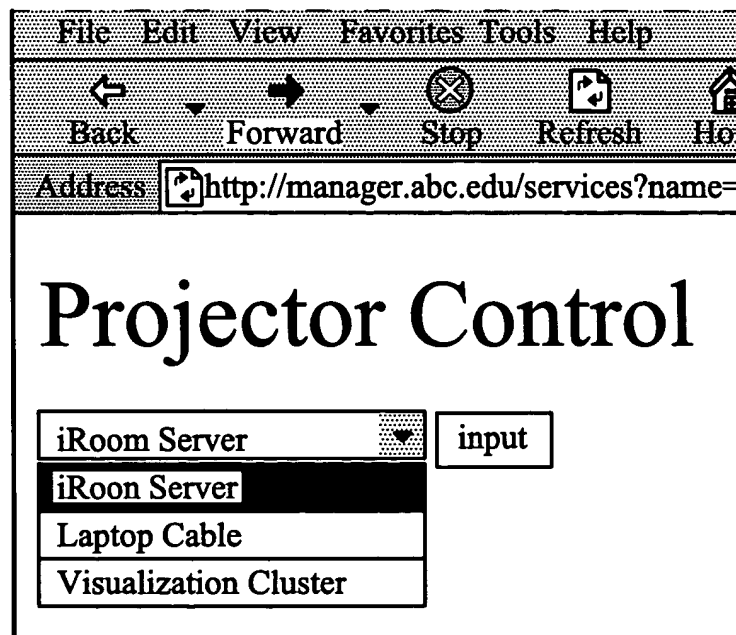


FIG. 6D

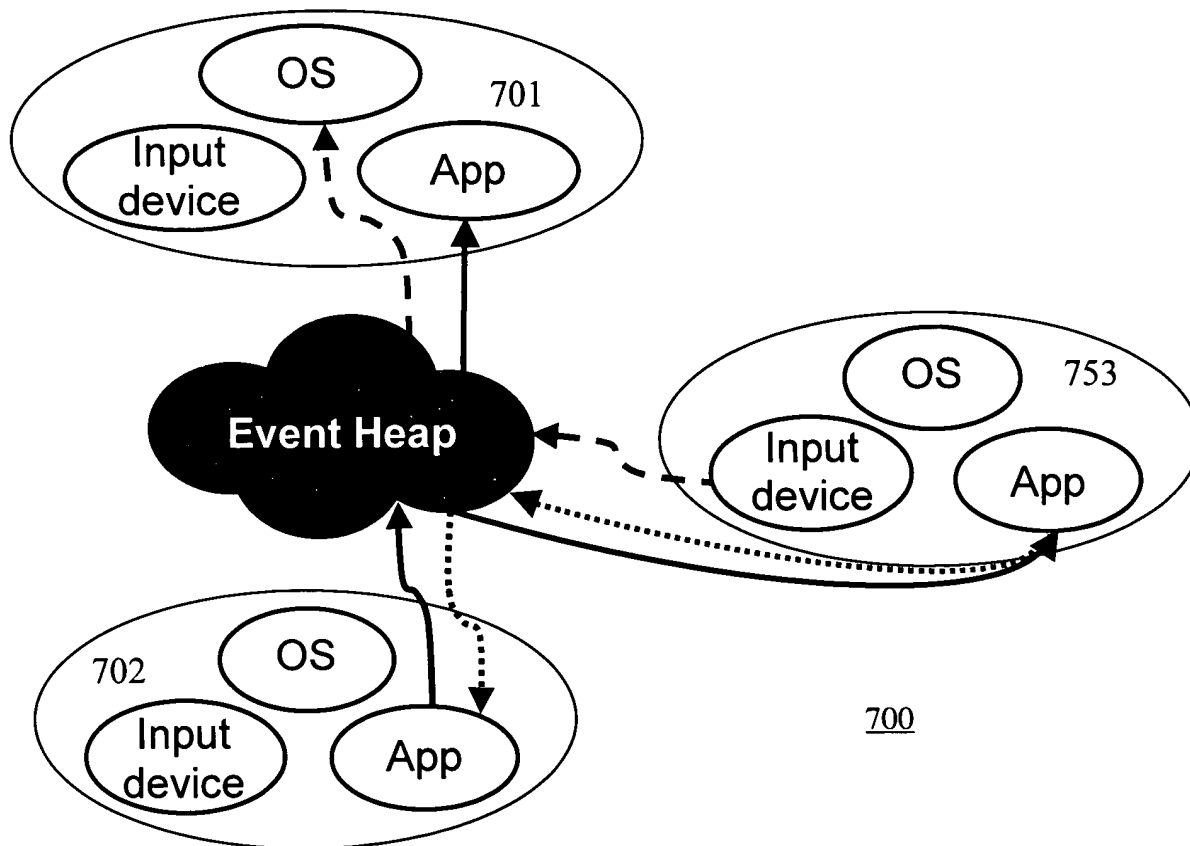
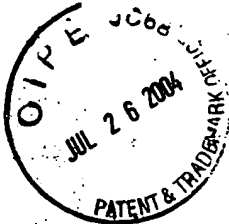


FIG. 7



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SELF-DESCRIPTION ONLY

Double xPos	=	Double xPos
Double yPos		Double yPos

FLEXIBLE TYPING AND SELF-DESCRIPTION

EventType MapLoc	≠	EventType GridCoord
Double xPos		Double xPos
Double yPos		Double yPos

(a) Example of False Match Under Basic Tuplespaces that is Fixed by Typing

Double xPos	≠	Double xPos	EventType MapLoc	EventType MapLoc
Double yPos		Double yPos	Double xPos	Double xPos
		Int zoomFactor	Double yPos	Double yPos
				Int zoomFactor

(b) Example of Flexible Typing Allowing Additional Field Data to be Inserted

Double xPos	≠	Double yPos	EventType CameraPos	EventType CameraPos
Double yPos		Double zPos	Double xPos	Double yPos
Double zPos		Double xPos	Double yPos	Double zPos
			Double zPos	Double xPos

(c) Example of Field Ordering Causing Mismatch which is Fixed by Flexible Typing

FIG. 8



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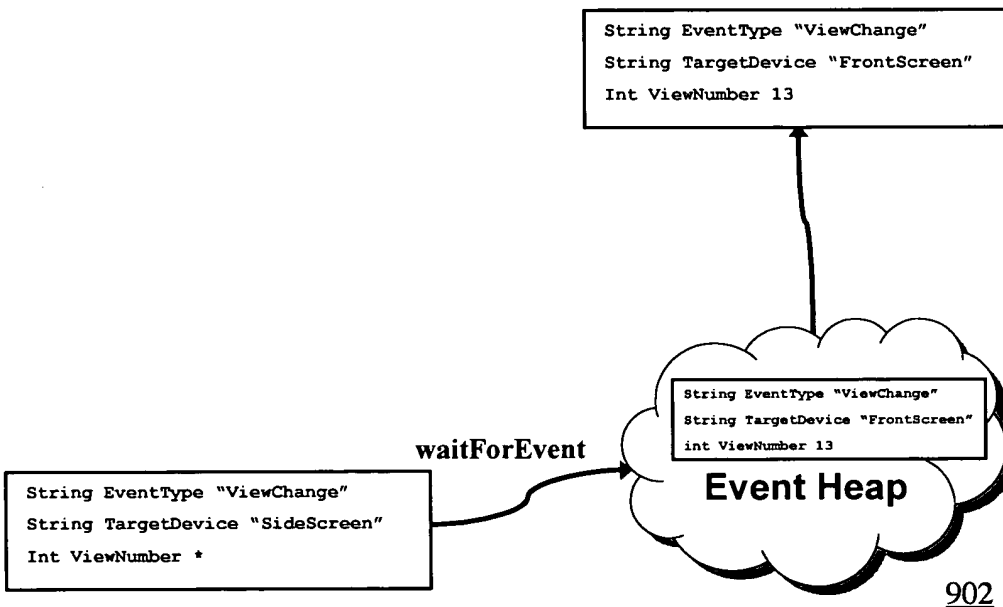
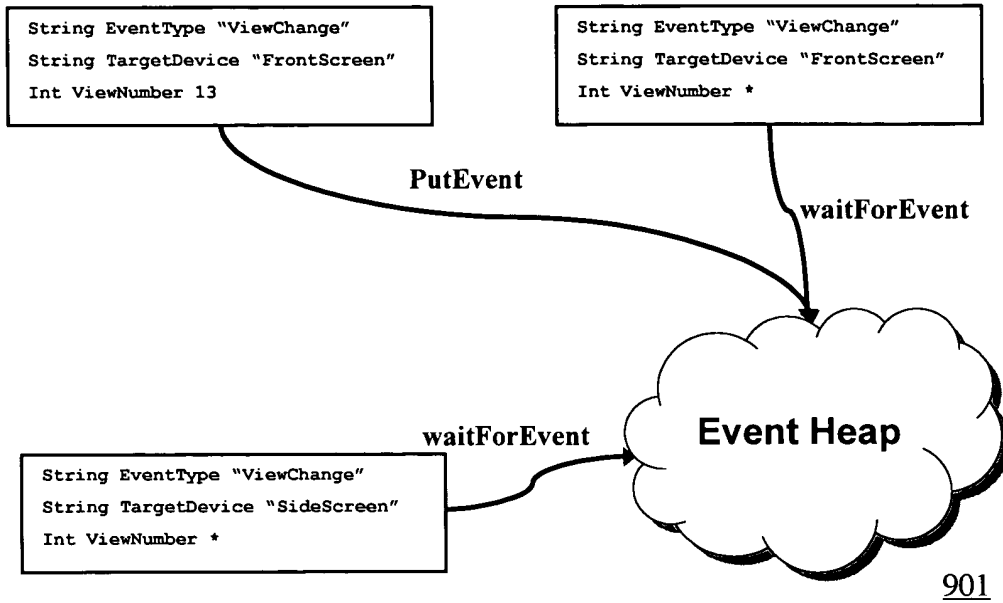


FIG. 9A



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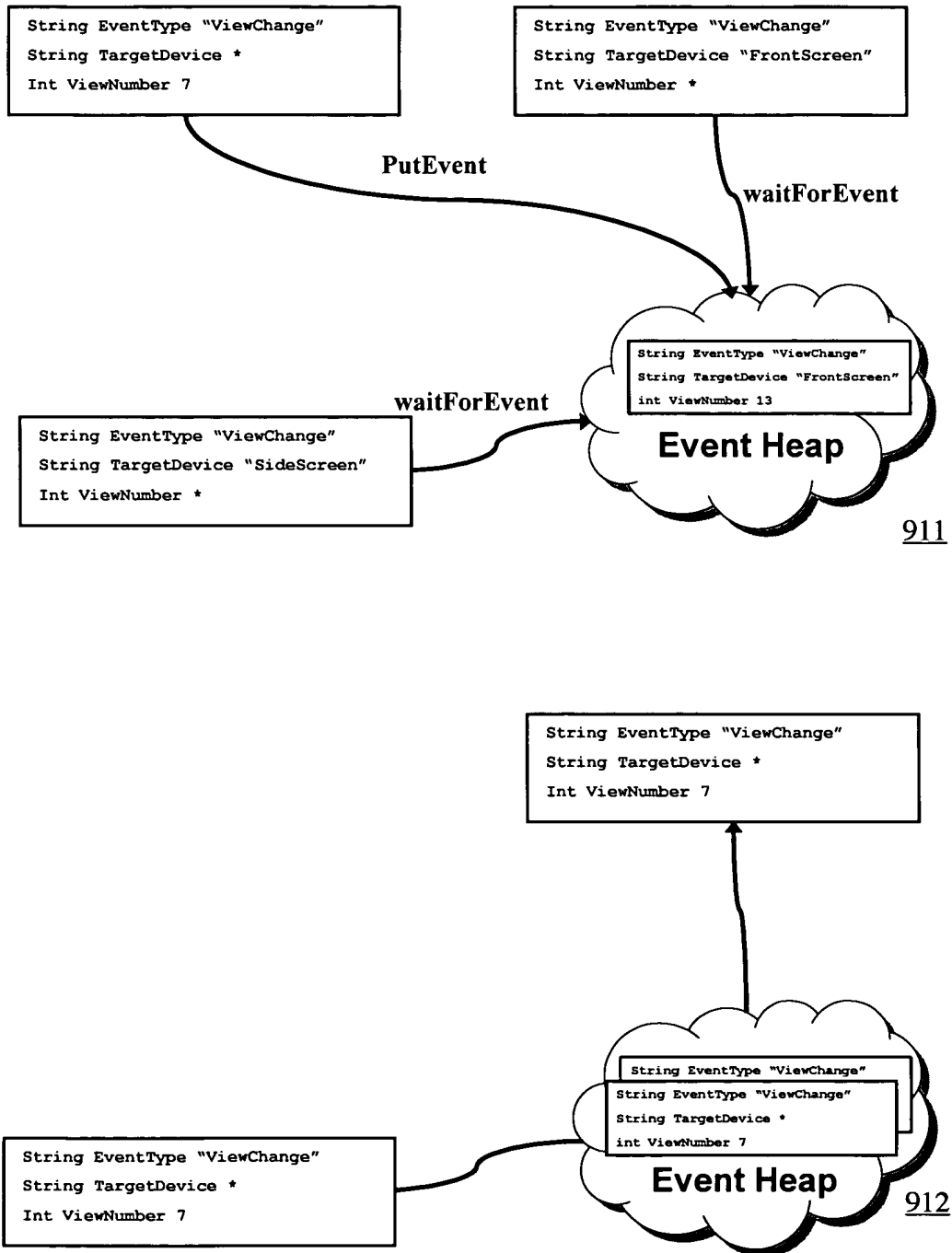


FIG. 9B

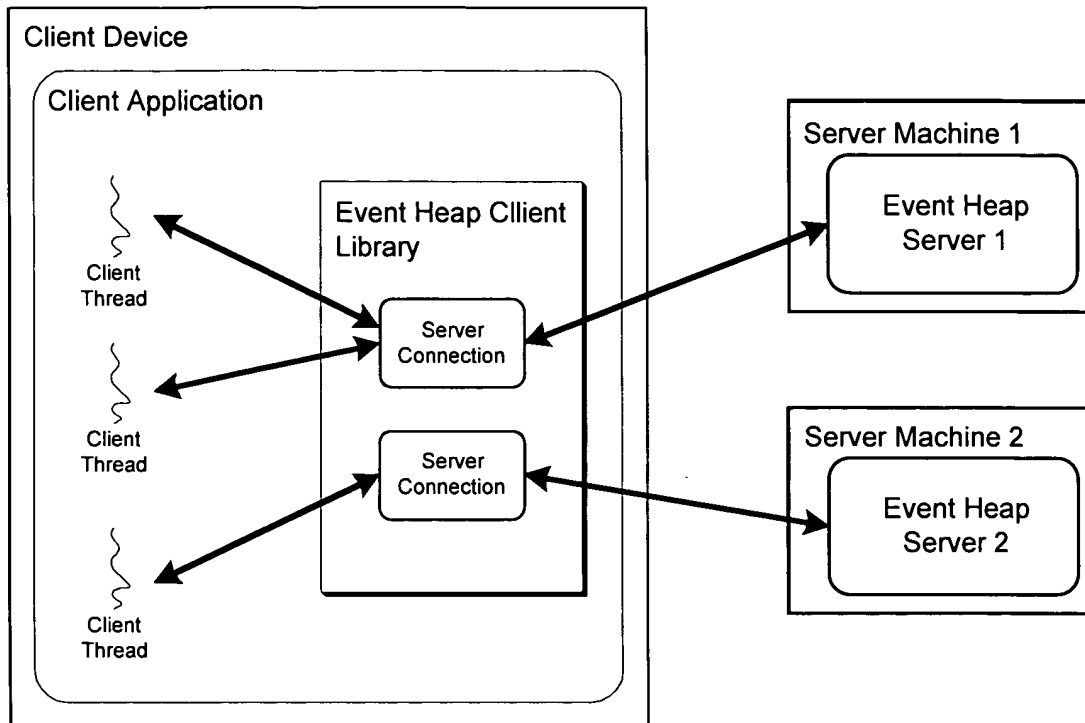


FIG. 10A

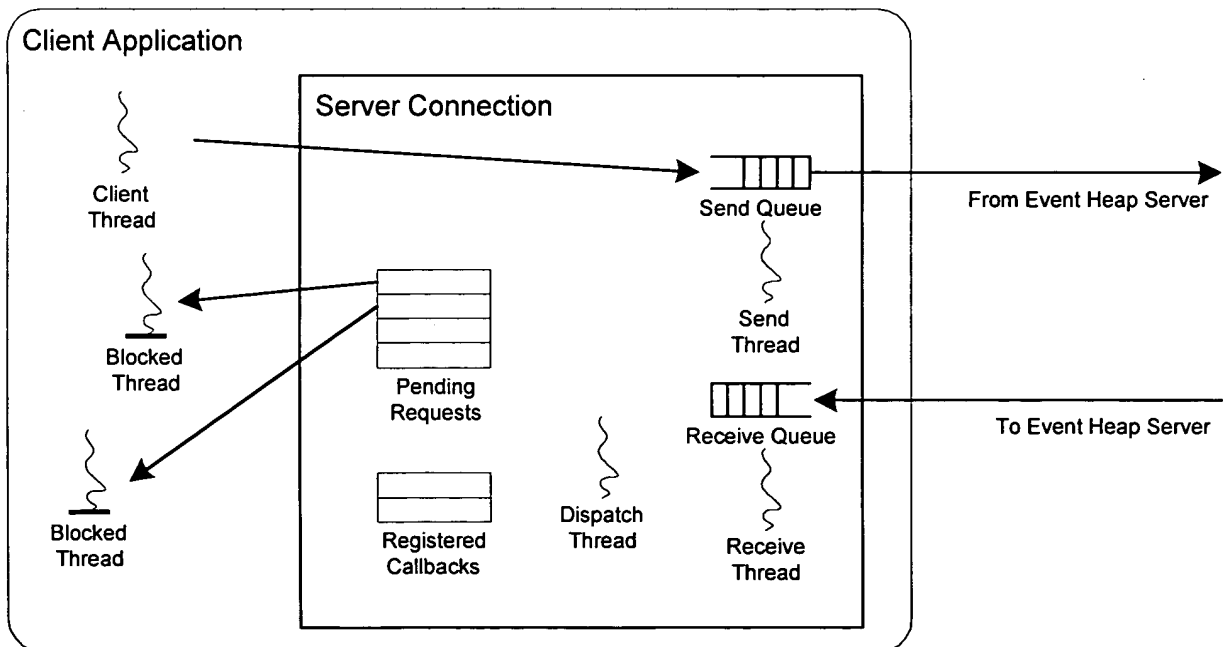
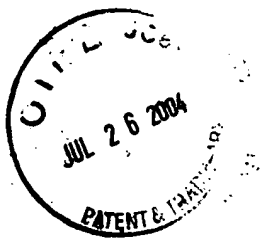


FIG. 10B



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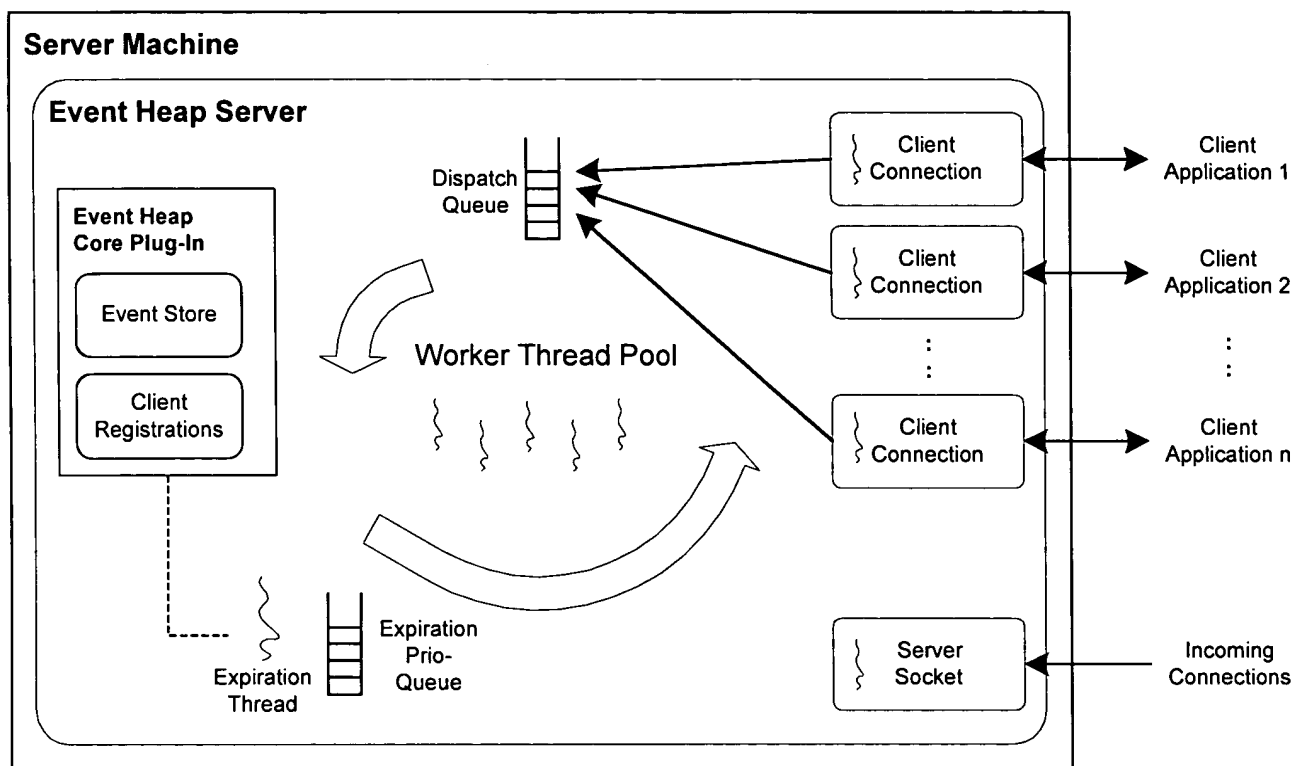


FIG. 11



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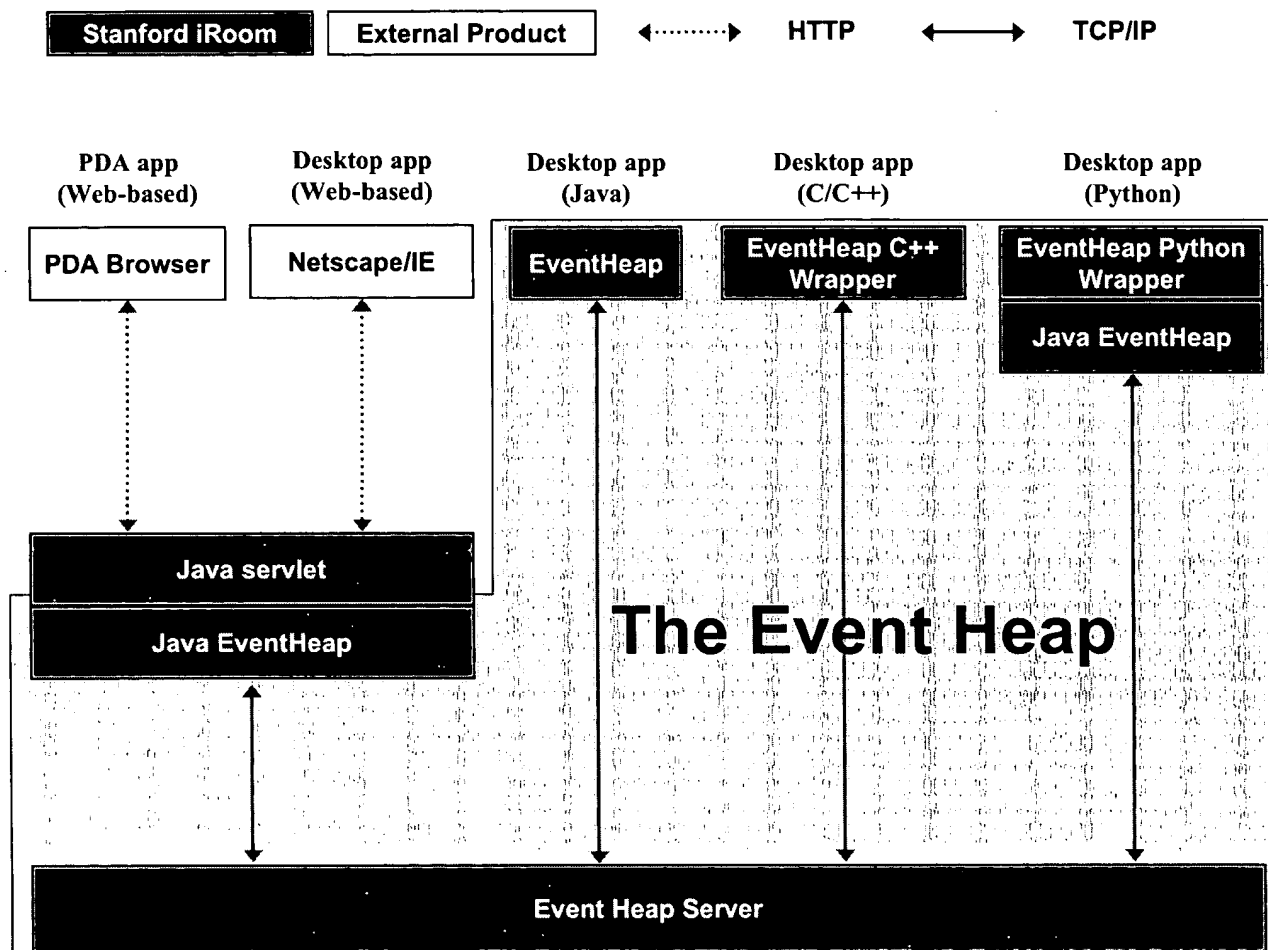
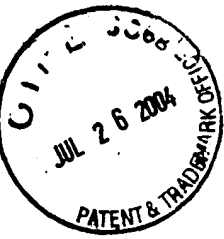


FIG. 12



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Event Heap Debugger

Machine: localhost

Port: 1

Source Name: lper_895645535

Application Name: EventHeapDebug

Device Name: fragment

Disconnect

Value:

Set Person

Set Group Name

Person: Group:

Event

Event Type: TestEvent

TimeToLive: 120000

Version: 2

Session ID: 1222127217

SequenceNum: 5

Post Value

Template Value

Name	Type	Post Value	Template Value
Application string	string	workHeap2.util.PerfolicExecute	AUTOSET_OVERRIDEABLE
Application string	string		FORMAL
Device string	string		AUTOSET_OVERRIDEABLE
Device string	string		FORMAL
Person string	string		AUTOSET_OVERRIDEABLE
Person string	string		AUTOSET_OVERRIDEABLE
Group string	string		AUTOSET_OVERRIDEABLE
Heap long	long	1002334908562	VIRTUAL
Heap int	int	4	VIRTUAL
Heap int	int	1	VIRTUAL

Field Name:

Type: int

Add Field

Result of getAI call (18 events):

putEvent

Event Type: '17'

Source: 8008_1849474018

(Name: NumAccesses)

Typ

getEvent

Event Type: '17'

Source: 7007_1924388574

(Name: NumAccesses)

Typ

removeE...

Event Type: '17'

Source: 6006_1537084659

(Name: NumAccesses)

Typ

waitToRe...

Event Type: '17'

Source: 5005_2046381882

(Name: NumAccesses)

Typ

waitFoE...

Event Type: '17'

Source: 4004_1146667085

(Name: NumAccesses)

Typ

snoopEv...

Event Type: '17'

Source: 3003_2130442438

(Name: NumAccesses)

Typ

deleteEv...

Event Type: '17'

Source: 2002_1547458209

(Name: NumAccesses)

Typ

getAI

Event Type: '17'

Source: 1001_2104118714

(Name: NumAccesses)

Typ

clear

Event Type: 'TestEvent'

Source: 1_1855372746

(Name: SendTime)

Typ

New

Delete

Clone

Clear

Machine: localhost

Port: 1

Source Name: Default

Application Name: EventHeapDebugger

Device Name: Default

Connection: Connected to localhost:4535

getAI: Event(s) retrieved from Event Heap

getAI call returned no events

getAI: Event(s) retrieved from Event Heap

FIG. 13



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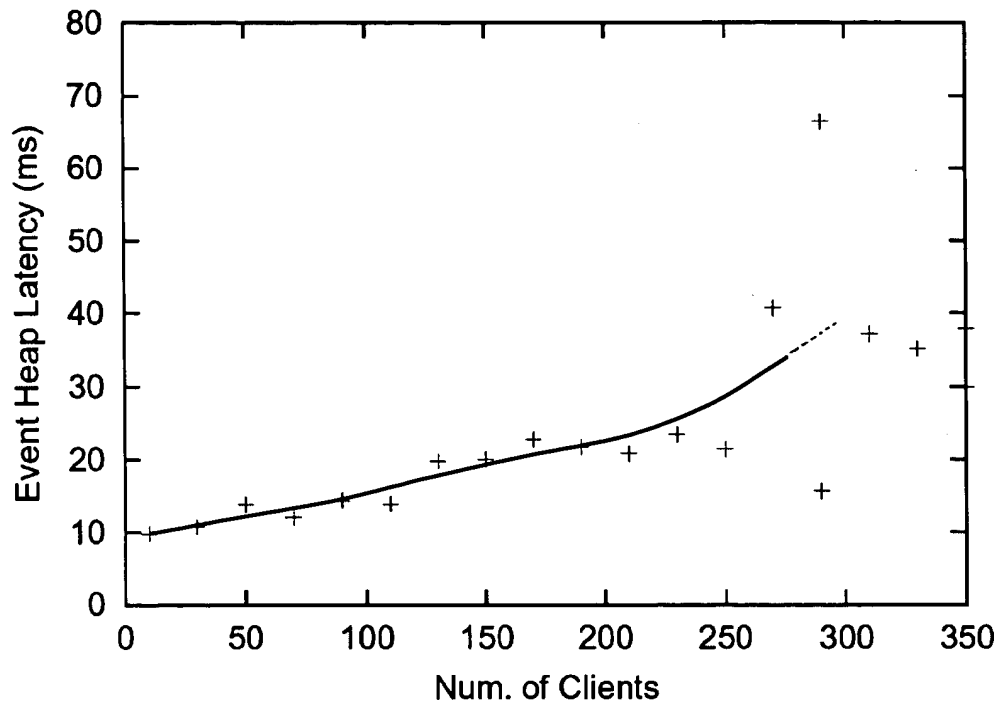


FIG. 15

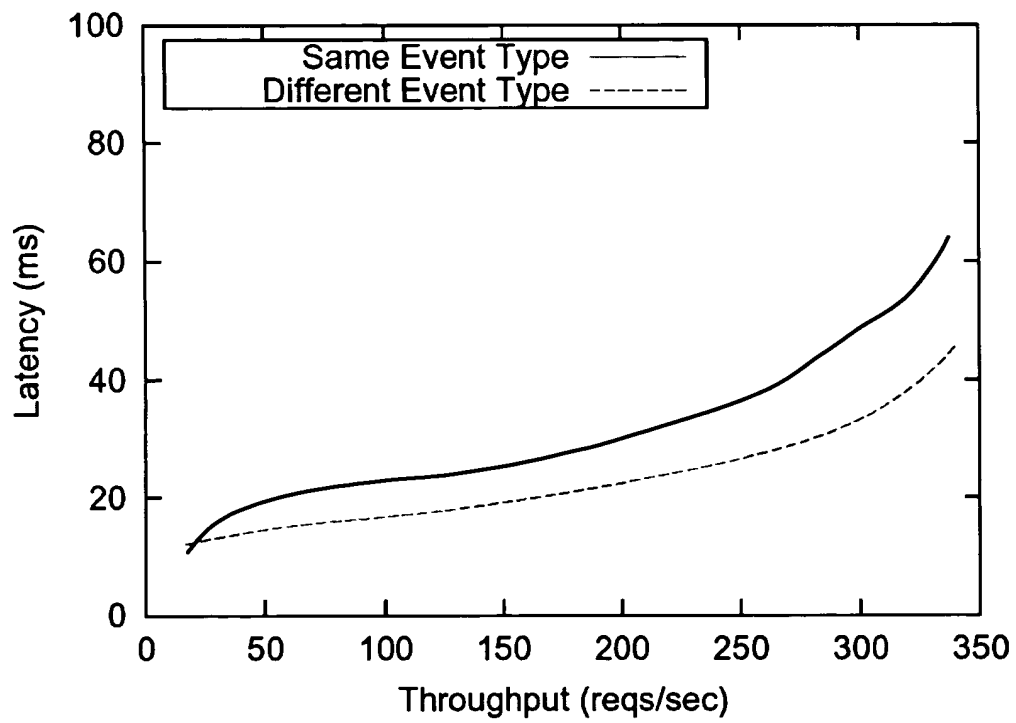


FIG. 15

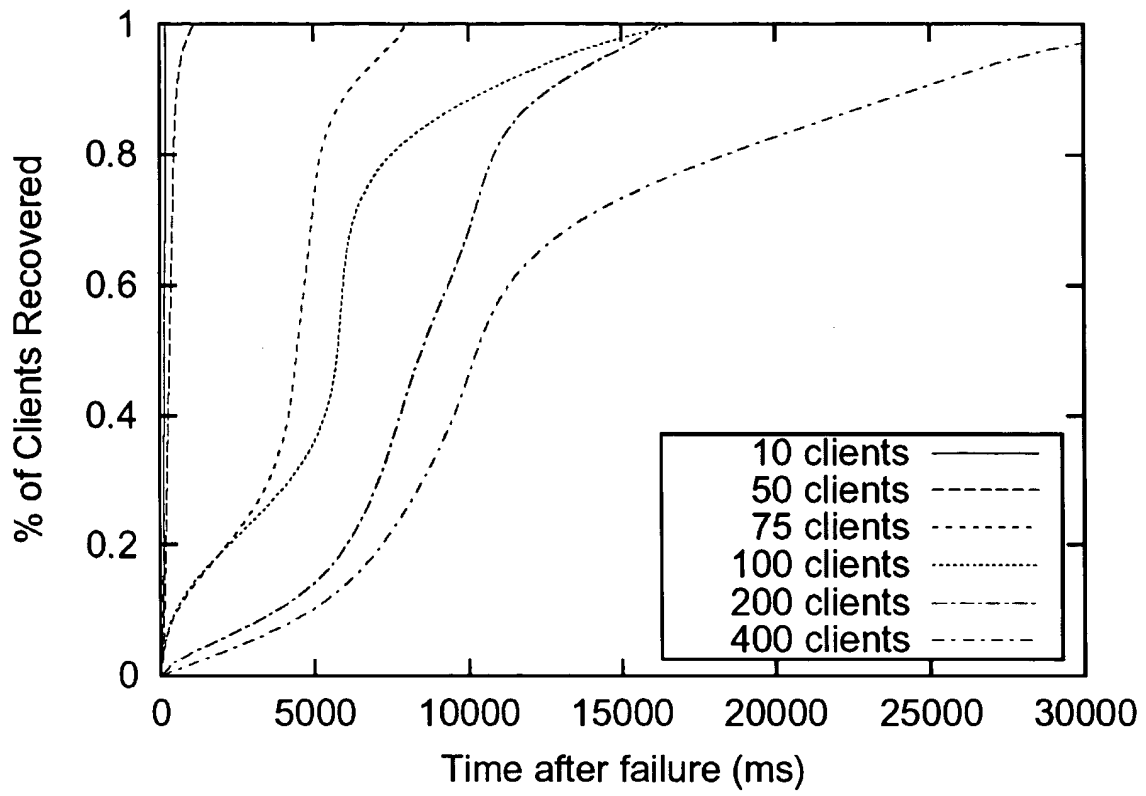


FIG. 16